

Work Order ID 115497

\*115497\*

Page 1

April-02-14 11:12:50 AM

Item ID: D3391-021

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Fwd Tube Assembly

Start Date: 4/02/14 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 4/16/14 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: ML3 Date: 14-04-02 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D3391	I
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100		0.00							
-----	--	------	--	--	--	--	--	--	--

\*100\*

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

Cut as per dwg.

110

0.00

\*110\*

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend as per Dwg D3391 Using Bend Prog 3391021

120

QC5- Inspect part completeness to step on W/O

0.00

\*120\*

QC

Memo

0.00

Quality Control

H-6.55

DAS  
03  
9-88

DP 14-4-15

DQA:

Date: 14/12/08

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

Date: 14/12/12

Work Order update only ☐

Work Order: 115492	<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input checked="" type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>			
Part No. D3391-021		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. 14-4288		Machining <input checked="" type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data	14/5/29	130	1	The 0.687 wide grooves were machined eccentric.	DAS 12 9-89	Section is at 98% strength. Acceptable, area is in non critical location, not in tension.	DAS 12 9-89	D.A.	DAS 16 9-89
Equip/Tooling				The min wall thickness is 0.040 on top edge and 0.064 on bottom edge. PART FITS INTO SKIDTUBE EXTRUSION	14/5/29		14/5/29	14/05/31	14/06/02
Handling/Pre				RC <del>Pre</del> Tooling					
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

## FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input checked="" type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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**Accept**

Setup Start \*NS1\*

Stop \*NS2\*

**\*1\***

**Cust Item ID:****Start Qty:** 1.00

**\* 1 \***

**Customer:**

**Req'd Qty: 1.00**

**Reference:**

Run Start \*NR1\*

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Stop **\*NR2\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

### Operation Description

## Set Up/ Run Hours

Tool ID	Tool #	Plan Code
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Accept	Qty
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
21	1
22	1
23	1
24	1
25	1
26	1
27	1
28	1
29	1
30	1
31	1
32	1
33	1
34	1
35	1
36	1
37	1
38	1
39	1
40	1
41	1
42	1
43	1
44	1
45	1
46	1
47	1
48	1
49	1
50	1
51	1
52	1
53	1
54	1
55	1
56	1
57	1
58	1
59	1
60	1
61	1
62	1
63	1
64	1
65	1
66	1
67	1
68	1
69	1
70	1
71	1
72	1
73	1
74	1
75	1
76	1
77	1
78	1
79	1
80	1
81	1
82	1
83	1
84	1
85	1
86	1
87	1
88	1
89	1
90	1
91	1
92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	1

Reject  
QtyReject  
Number

**Insp.  
Stamp**

**DAS 13 9-89**

160

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*160\***

0.00

QC

## Memo

## Quality Control

170

QC8- Inspect parts - second check

0.00

**\*170\***

0.00

QC

## Memo

## Quality Control

**DAS  
08  
9-89**

Work Order ID 115497

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Item ID: D3391-021 Accept \*N900040100\* Setup Start \*NS1\*  
Revision ID: Stop \*NS2\*  
Item Name: Fwd Tube Assembly  
Start Date: 4/02/14 Start Qty: 1.00 \*1\* Cust Item ID:  
Required Date: 4/16/14 Req'd Qty: 1.00 \*1\* Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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180

\*180\*

Skidtubes

Skidtubes

Memo

0.00

1-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875"  
holes drilled in previous step

2-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap  
holes to finish size)  
(ONLY DRILL HOLES MARKED "A")

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023

\*\*\*NO WEARPLATE HOLES ARE TRANSFER DRILLED\*\*  
MID TUBE BATCH # 115504

14-6-31/18

OC 14/06/03

14-7-22

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**Accept**

Setup Start \*NS1\*

Stop \*NS2\*

**Item Name:** Fwd Tube Assembly

**Start Date:** 4/02/14      **Start Qty:** 1.00      **\*1\***

**Cust Item ID:**

**Required Date:** 4/16/14      **Req'd Qty:** 1.00      **\*1\***

**Customer:**

**Reference:**

**Approvals:**      **Process Plan:**                      **Date:**                      **Tooling:**                      **Date:**

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

[illegible]

# Work Order ID 115497

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Item ID: D3391-021 Accept \*N900040100\* Setup Start \*NS1\*  
Revision ID: Stop \*NS2\*  
Item Name: Fwd Tube Assembly  
Start Date: 4/02/14 Start Qty: 1.00 \*1\* Cust Item ID:  
Required Date: 4/16/14 Req'd Qty: 1.00 \*1\* Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	Skidtubes	0.00							
*220*									
Skidtubes	Memo	0.00							
Skidtubes	1-instal spacers as per dwg D3391 A/R Magnabond 6398 batch: <u>M129172</u> exp. date: <u>14-12-30</u> cure time 12hrs. as per QSI015 2- grind crossbolt flush 3-back drill crossbolt if necessary								
230	QC5- Inspect part completeness to step on W/O	0.00							
*230*									
QC	Memo	0.00							
Quality Control									
235	Pressure Wash per QSI005 4.3	0.00							
*235*									
HandFinish	Memo	0.00							
Hand Finishing	AND REALODINE AS PER QSI 005								

DAS  
38  
9-89

DAS  
9  
9-89

14/08/06

1 7614-9-15

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## Hand Finishing

DAS 34 2.80

**DAS  
15  
9-89**



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Item ID: D3391-021

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Fwd Tube Assembly

Start Date: 4/02/14 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 4/16/14 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
256	QC5- Inspect part completeness to step on W/O	0.00				1			DAS 38 9-89 14-8-22
*256*	QC	0.00							
Quality Control	Memo								
260	Identify as per dwg & Stock Location: <u>w/o</u>	0.00	0412-742-043	13115493					1x of 22 1409/19
*260*	Packaging	0.00							
Packaging	Memo								
280	QC21- Final Inspection - Work Order Release	0.00							
*280*	QC	0.00							MLJ 14-09-22
Quality Control	Memo								

# Picklist Print

April-02-14 11:12:53 AM

Page 1

Work Order ID: 115497

**\*115497\***

Parent Item: D3391-021

**\*D3391-021\***

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14

Required Date: 4/16/14

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A05.09.13New issue KJ/JLM  
 IPP B06.02.10Dwg rev.D ecn 773 EC  
 IPP C06.05.02Added inspections EC  
 IPP D 07.03.13 rev F dwg EC  
 IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD  
 IPP Rev:f ECN 1056 07-11-12 DD verified by: EC  
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC  
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC  
 IPP Rev I 09.02.02 added hardware EC verified by: DD IPP Rev:J  
 11.11.14 AS PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4095-051		Manufactured	No				Each	9.0000		1			
<b>*D4095-051*</b>									<b>**</b>				
Wearpad Assembly													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				FP001				9					
				108291				9					
D6013-047		Manufactured	No			100	Each	166.0000	1	1			
<b>*D6013-047*</b>									<b>**</b>				
Skidtube Material													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				LG003				166					
				72505				42					
				86064				124					

B 116096 (w) Jll 4/10/14

04/14/04/14

①

# Picklist Print

April-02-14 11:12:53 AM

Work Order ID: 115497

**\*115497\***

Parent Item: D3391-021

**\*D3391-021\***

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14

Required Date: 4/16/14

Start Qty: 1.00

Required Qty: 1.00

D3670-4-200

Manufactured No

220

Each

300.0000

4

**\*D3670-4-200\***

Bushing

\*\*

147-29

Location

Loc Qty

Loc Code

FG

10

87709

10

LG001

290

103880

39

109108

242

96240

9

#

D3401-041

Manufactured No

Each

30.0000

1

**\*D3401-041\***

Tow Cap Assembly

\*\*

all 140419

Location

Loc Qty

Loc Code

FP001

30

103868

5

109127

9

92680

1

94116

4

94303

11

yl

# Picklist Print

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Work Order ID: 115497

**\*115497\***

Parent Item: D3391-021

**\*D3391-021\***

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14

Required Date: 4/16/14

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

Each

9,644.000

10

**\*NAS1149C0332R\***

**\*\***

WASHER

Location

Loc Qty

Loc Code

GA	1005	
125654	1005	
ST292	4968	
m128591	4968	
st510	3671	
m126319	61	
m127306	2500	
m127410	1084	x10
m127831	26	

AN3C4A

Purchased

No

Each

2,208.000

10

**\*AN3C4A\***

**\*\***

Bolt

Location

Loc Qty

Loc Code

FG	20	
122814	20	M129520
ST350/513	1000	x10
M128606	1000	
ST512	3	
124221	3	
ST513	1185	
125388	122	
M127410	1	
M127832	62	
M128634	1000	

# Picklist Print

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Work Order ID: 115497

**\*115497\***

Parent Item: D3391-021

**\*D3391-021\***

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14

Required Date: 4/16/14

Start Qty: 1.00

Required Qty: 1.00

D3672-1

Manufactured No

Each

1,420.000

4

**\*D3672-1\***

**\*\***

Phenolic Washer

Location

Loc Qty

Loc Code

FG

10

85222

10

ST060

1410

103845

4

112218

500

113581

500

93886

224

99099

182

AELS-1032-225

AELS8-1032-225 Purchased No

Each

400.0000

10

**\*AFI S-1032-225\***

AFI S-1032-225

**\*\***

Insert

Location

Loc Qty

Loc Code

ST280

400

m128179

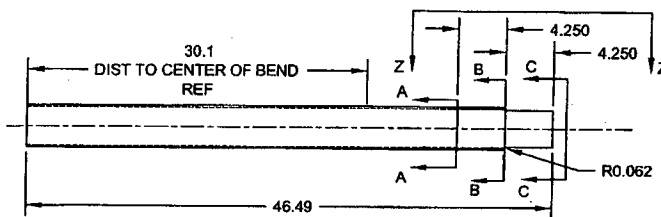
400

FA28649

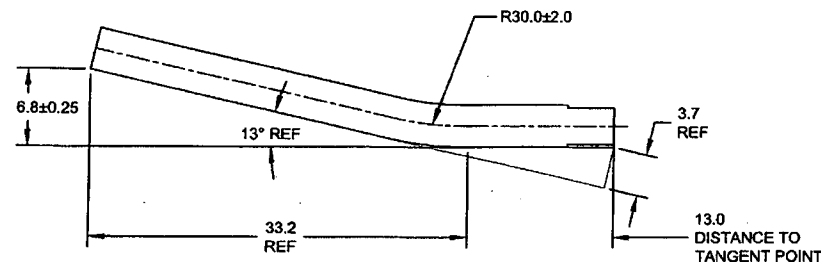
V18

## FIRST ARTICLE INSPECTION CHECKLIST

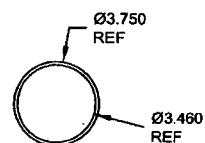
Rev	Date	Change	Revised by	Approved
A	06.04.27	New Issue P/O D3391-011/-021	KJ/JLM	
B	06.06.19	Tolerances revised per D3391 Rev. E	KJ/JLM	
C	07.03.21	Dimensions removed per Dwg rev. F	KJ/JLM	
D	07.11.23	Dwg Rev. updated	KJ/EC/DD	
E	09.12.14	Dwg Rev updated	KJ	
F	11.06.21	Dimension 0.500 added	KJ	
G	12.05.15	Dwg Rev updated	KJ	



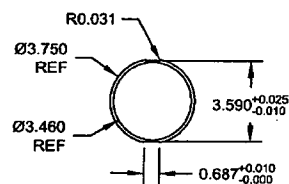
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



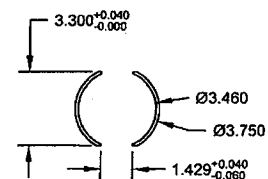
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



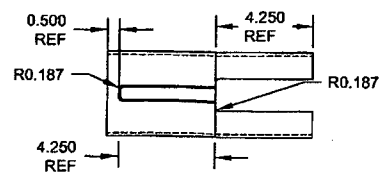
**SECTION A-A**  
SCALE 2X



**SECTION B-B**  
SCALE 2X



**SECTION C-C**  
SCALE 2X



**VIEW Z-Z**  
SCALE 2X

115497 MJS  
14-04-02

RELEASED  
2011-11-04

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO.	REV. 1
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

